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PROGRESS REPORT FOR THE MONTH OF JUNE, 1962

Seven flights were flown by F-101 during June but resulted in maps no better than flight #11 flown in May. In addition to aircraft maintenance, weather, and temperamental equipment, there was incorrect bias setting and inadequate limiting of strong signals so that those flights which should have produced better maps did not.

The Recorder is presently the original 1-X, with a 1 mil CRT which is beginning to fail, and an overall spot size of about 4 mils. There are no  $\frac{1}{2}$  mil Westinghouse tubes operative, although two replacements are due in July. There is only one AMP power supply operative and three more reworked models are due in July. The G. E. tubes are under test at Itek but the airborne power supply for it has failed and has been returned to the vendor for repair. The G. E. tube has good resolution but is most difficult to align, perhaps too difficult for field operation. The Lens-Optics Back-Up Recorder is nearing completion and preliminary tests indicate sufficient light and hope for sufficient resolution.



Evaluation should be completed in July. Satisfactory performance of the Lens-Optic system is necessary, according to the new Westinghouse proposals, for successful system performance.

The Transmitter has operated between 8 and 5 watts in recent flight tests. This is sufficient power for ground mapping at 20,000 feet but considerable improvement will be necessary in order to operate from 40,000 feet per original flight test specs. There are plans to increase the length of the ring and hence the pulse in July.

The Receiver has shown continued trouble in maintaining the proper offset frequency and hence the correct "squint". A redesign of this section and a new doppler frequency tracker are scheduled for July. There is still no adequate A.G.C. and evidence of film saturation by strong targets such as the bay bridge on some flights indicates the need of corrective measures here.

Westinghouse representatives have agreed to work closely with Mr. MacDonald on the problems of antenna installation and to arrive at an adequate solution as soon as possible.

Fiber Optics received some attention this month. Itek will test a new thin fiber sample for resolution. If acceptable, design work will be initiated by Itek to procure a different bulb for the tube with the goal of building a single trace  $\frac{1}{2}$  mil spot CRT. This new bulb would have a necked-down rectangular faceplate



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with a narrow fiber window. If the sample fibers are not acceptable, work to produce a satisfactory short bundle which would protrude from the faceplate will continue. Efforts to build an unfolding array at Mosaics have almost ceased.